

Highlights from 2020 Census Operational Quality Metrics

Presentation to the National Advisory Committee
November 5, 2021

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Outline

- Ensuring high quality data from the 2020 Census
- Overview of operational quality metrics
 - Release 1
 - Release 2
 - Release 3
- Accessing the operational quality metrics
- Highlights
- Summary and next steps

Ensuring high quality data from the 2020 Census

Commitment to Quality and Transparency

Sharing what we know, when we know it.

Releasing information and metrics on data quality on an earlier schedule than typical with a decennial census.

Engaging with the National Academy of Sciences (NAS) Committee on National Statistics, American Statistical Association Quality Indicators Task Force, and JASON.

Exploring additional quality assessments, beyond those planned in operational assessments and evaluations.

Ensuring High Quality Data from the 2020 Census

Multi-prong Approach:

- Chartered the 2020 **Data Quality Executive Guidance Group in April 2020** to ensure that we had the right focus and resources dedicated to detecting and addressing data quality issues.
- Initiated the **engagement of external expert groups**, as part of our commitment to transparency, to provide quality assessments on different aspects of the program and on different timelines.
- Expanded the **tools and metrics** already in place to assess Census Quality.

Data Quality External Expert Engagement Efforts

Asking outside experts to review our work is standard operating procedure at the Census Bureau. It underscores our commitment to quality and transparency.

Engaging with the National Academy of Sciences (NAS) Committee on National Statistics, American Statistical Association (ASA) Quality Indicators Task Force, and JASON. These three groups tackle different aspects of assessing the Census Bureau's work. Their reports will advise the Census Bureau on improving future censuses and will help the public understand the quality of the 2020 Census data.

- **Quick turnaround feedback** on our processes, procedures and metrics from JASON. We shared their final report publicly in February 2021.
- **A real-time assessment** by a team of experts from the ASA on quality indicators. The ASA posted their task force report, "2020 Census State Population Totals: A Report from the American Statistical Association Task Force on Census Quality Indicators," in September 2021. The report concluded "no evidence of anything other than an independent and professional enumeration process" and "no major anomalies that would indicate census numbers are not fit for use for purposes of apportionment."
- For a **longer-term assessment**, we have established a consensus panel with the Committee on National Statistics that will conduct an evaluation of the quality of the data from the 2020 Census. We held our kick-off meeting in May 2021, and it is anticipated that the study will take up to 24 months.

2020 Census Tools, Assessments and Evaluations

Milestones for Release of Data Quality Assessment Metrics:

- Release of Demographic Analysis Results: Released December 15, 2020
- Release of 2020 Census Operational Quality Metrics:
 - April 26, 2021
 - May 28, 2021
 - August 18, 2021
 - August 25, 2021
- Release of Initial 2020 Post Enumeration Survey Results: First quarter 2022

Assessments are designed to document final volumes, rates, and costs for individual operations or processes using data from production files and activities and information collected from debriefings and lessons learned. 51 Operational Assessments on the 2020 Census will be published, beginning in early 2022.

Evaluations are designed to analyze, interpret, and synthesize the effectiveness and efficiencies of census components and their impact on data quality and coverage. A total of 14 Evaluations on the 2020 Census will be published, beginning in early 2022.

Overview of operational quality metrics

Three Releases of Operational Quality Metrics

- Release 1 on April 26
 - Final address resolution by data collection operation
 - Housing unit status for Nonresponse Followup (NRFU)
- Release 2 on May 28
 - Average household size by data collection operation
 - Housing unit status by data collection operation
- Release 3 on August 18 and 25
 - Sub-state summaries of selected release 1 metrics
 - Item nonresponse rates by data collection operation

State-Level Operational Quality Metrics

Metrics available based on:

- 2020 Census data
- 2010 Census data (for comparison)*

Metrics generated for:

- U.S. total (excludes Puerto Rico)
- Each of the 50 States
- District of Columbia
- Puerto Rico

*2010 data not available for sub-state summary metrics in release 3.

Comparisons from 2010 to 2020

- No single number can definitively quantify the quality of the census.
- Operational metrics are data points related to progress and results of census operations.
- Insights gained through comparisons by state and comparisons to past census results.
- Differences are:
 - A result of changes within the Census Bureau's control such as changes in the operational design since 2010.
 - A result of changes outside of the Census Bureau's control such as normal changes in the population, respondent behavior, and COVID-19.
 - Expected across geographies and when making comparisons to the 2010 Census.
- Different doesn't necessarily mean "better" or "worse."

Accessing the operational quality metrics

Accessing the 2020 Census Data Quality Page



1. Go to www.census.gov

Select **SURVEYS/PROGRAMS**
(at the top of the page) and
2020 Census

2. Then select [2020 Census Data Quality](#)



2020 Census Data Quality

On this webpage you'll find:

- Operational Quality Metrics
- An interactive Operational Quality Metrics tool
- Comparisons to population benchmarks
- Outside expert reviews
- Operational assessments and evaluations
- Technical documentation, FAQs, and more!

Viewing the Operational Quality Metrics

Option 1: Downloadable excel tables

 2020 Census Data Quality Operational Metrics: Release 1 [<1.0 MB]

3	2020 Census Operational Quality Metrics: Release 1							
4								
5								
6		U.S. Total	Alabama	Alaska	Arizona	Arkansas	California	Colorado
7	Total Addresses (Count)	151,800,000	2,592,000	378,000	3,338,000	1,579,000	15,450,000	2,683,000
8								
9	Final Status of Addresses							
10	Percent Resolved as:							
11	Self-Response Occupied	64.28%	60.30%	47.09%	61.05%	58.01%	66.60%	66.83%
12	Self-Response Vacant/Delete (applies to 2020 Census only)	1.00%	0.81%	0.87%	1.33%	0.79%	0.88%	1.08%
13	Nonresponse Followup Occupied	17.36%	15.32%	18.25%	18.51%	16.28%	18.58%	15.73%
14	Nonresponse Followup Vacant	7.95%	9.72%	10.19%	9.92%	9.63%	5.06%	7.64%
15	Nonresponse Followup Delete	6.59%	10.73%	6.48%	6.05%	12.41%	6.12%	5.93%
16	Group Quarters Occupied	0.13%	<0.1%	0.42%	0.11%	<0.1%	0.18%	<0.1%
17	Group Quarters Vacant/Delete	<0.1%	<0.1%	0.34%	<0.1%	<0.1%	<0.1%	<0.1%
18	Other Occupied (2020: UE, RA, SRQA, and Cov Imp; 2010: UE, RUE, RA, and CFU)	1.21%	1.22%	5.03%	0.88%	1.04%	1.37%	0.99%
19	Other Vacant (2020: UE, RA, SRQA, and Cov Imp; 2010: UE, RUE, RA, and CFU)	<0.1%	<0.1%	3.97%	<0.1%	<0.1%	<0.1%	<0.1%
20	Other Delete (2020: UE, RA, SRQA, and Cov Imp; 2010: UE, RUE, RA, and CFU)	0.51%	0.58%	6.22%	1.38%	0.79%	0.29%	0.88%
21	Unresolved Housing Units (went to Count Imputation)	0.93%	1.16%	1.03%	0.70%	0.95%	0.85%	0.82%
22	Unresolved, data collection	0.23%	0.33%	0.37%	0.20%	0.15%	0.19%	0.26%
23	Unresolved, person unduplication (applies to 2020 Census only)	0.71%	0.83%	0.66%	0.49%	0.79%	0.65%	0.58%
24								

Viewing the Operational Quality Metrics

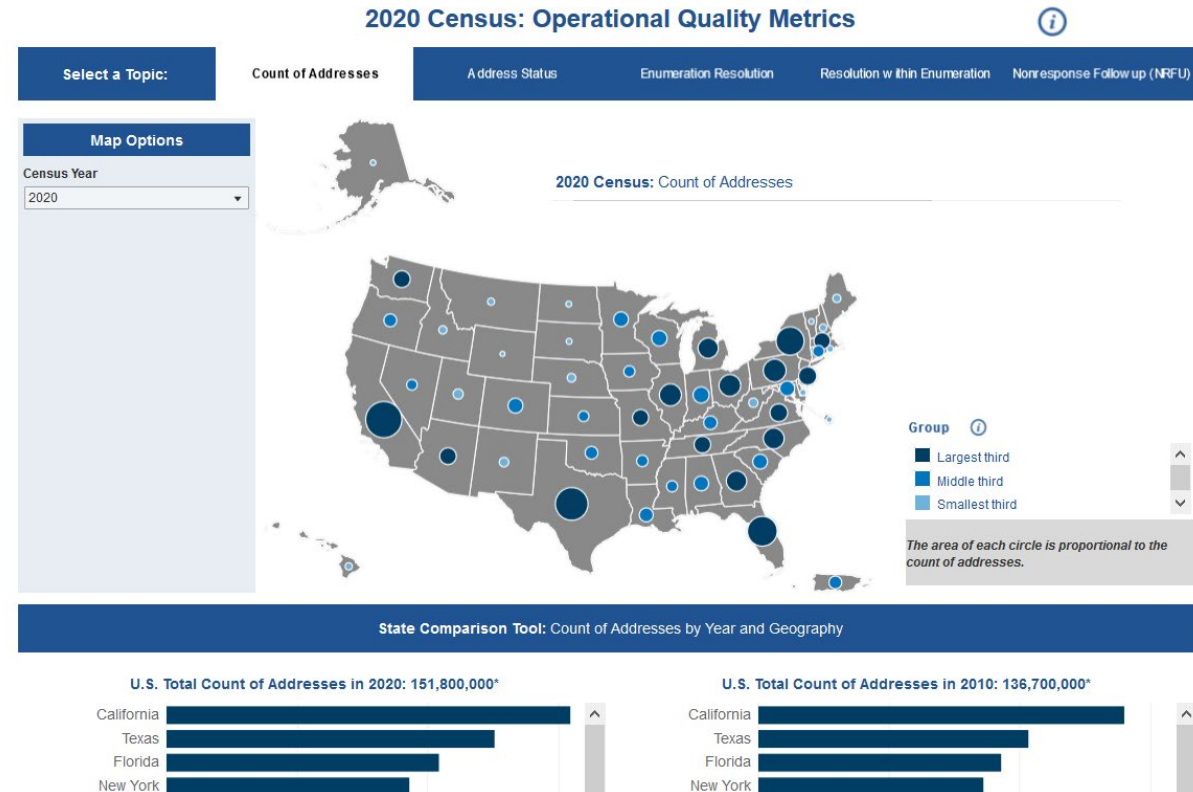
Option 2: Interactive dashboards (releases 1 and 2 only)

Visualization | April 26, 2021

2020 Census: Operational Quality Metrics

Interactive dashboard that makes it easy to compare metrics:

- 2020 Census to the 2010 Census.
- U.S. total to a state.
- State to state.



Quality metrics release 1 (April 2021)

Summary of Metrics Available in Release 1

- Final resolution of addresses by data collection operation
 - Self-response, Nonresponse Followup (NRFU), Group Quarters, Other operations, or Unresolved (went to count imputation)
 - Occupied, vacant, delete
- Self-response resolution by mode
 - Internet, paper, telephone
- NRFU resolution by respondent type and housing unit status
 - Occupied, vacant, delete
 - Household member, proxy (such as a neighbor or landlord), or administrative records
- Population count only, among NRFU occupied households (household member or proxy)

Highlights from Release 1

- 65.28% of census addresses were resolved by self-response.
- The majority (79.74%) of households that responded did so online.
- Among occupied households in NRFU, 55.48% were enumerated by a household member, 26.07% by a proxy respondent, and 18.44% using high-quality administrative records.
- 0.23% of addresses were unresolved after data collection. Another 0.71% were unresolved as a result of person unduplication during data processing. Combining these two rates – the total count imputation rate was 0.93%.

2020 Census Resolution of Addresses

Every address in the 2020 Census universe must be assigned a resolution.

Resolution of an address involves a determination of status (occupied, vacant, or nonexistent) and when occupied, collection of census response information for all persons at an address.



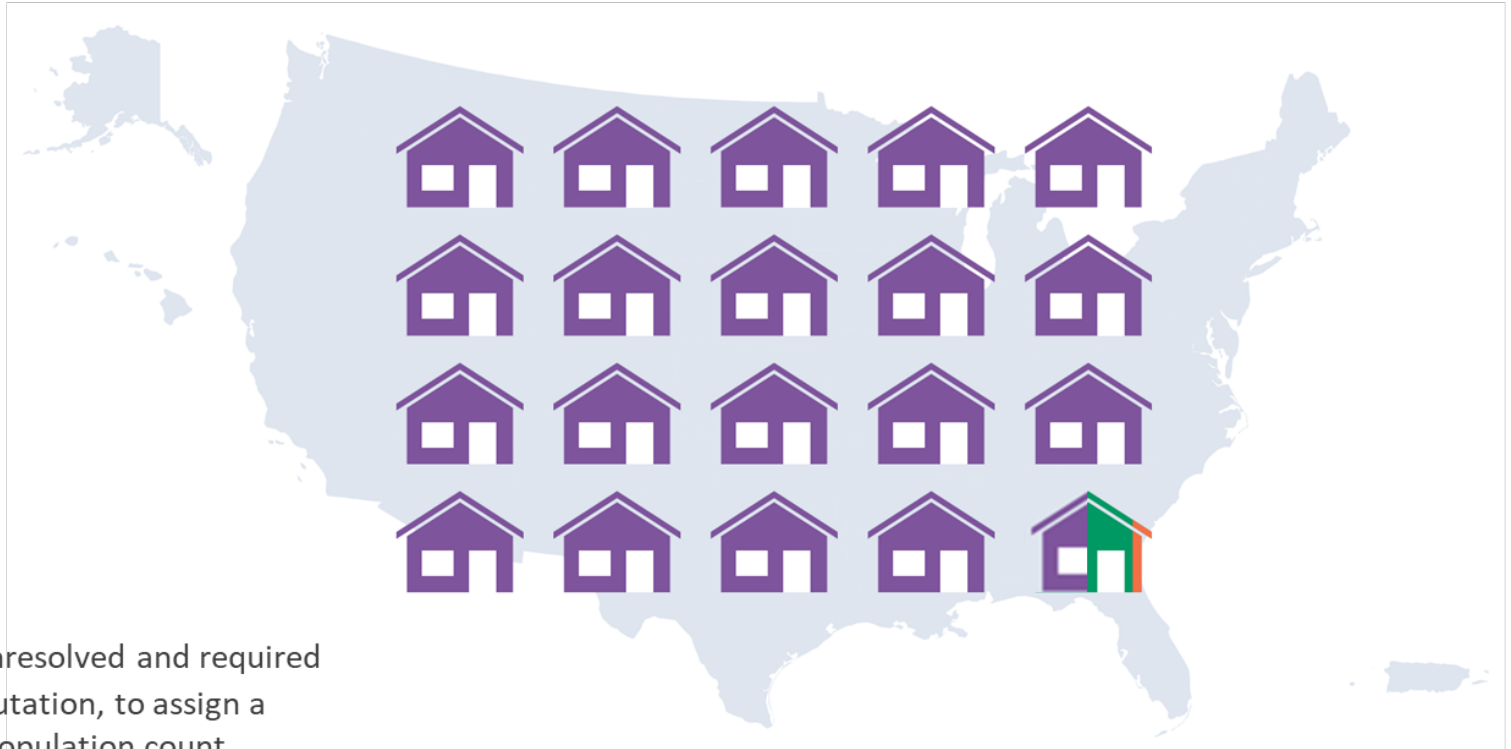
Over 97% of addresses were resolved through self-response (internet, phone or paper) or nonresponse followup (household interview, high-quality administrative records, or proxy interview).



Almost 2% of addresses were resolved through operations targeted at unique geographies or populations such as addresses in remote areas of Alaska or addresses for group quarters, where people live and receive services.



Less than 1% of addresses were unresolved and required a statistical methodology, known as imputation, to assign a status, and when occupied, to assign a population count.



Quality of Address Resolutions – a Hierarchy

	2010	2010 Cumulative Total *		2020	2020 Cumulative Total *
Highest quality data are collected through self-response online, by phone, or by mail	61.1%	61.1%		65.3%	65.3%
If we don't receive a self response, we:					
• Prefer an interview with a household respondent	18.8%	79.9%		10.8%	76.1%
• Can use high-quality administrative records, when available, when a household respondent can not be reached (only 2020)				4.6%	80.7%
• Will collect a response from a neighbor, landlord, or building manager (a proxy response) after multiple attempts to collect data from a household respondent are unsuccessful	19.5%	99.4%		18.2%	98.9%
Unresolved addresses after data collection	0.4%	99.8%		0.2%	99.1%
Unresolved addresses after person unduplication				0.7%	99.8%

* Numbers may not sum to 100% due to rounding.

2020 Census Comparison to 2010 Census: Addresses Resolved as Self-Response

Every State Had Higher Self-Response Resolution in 2020 Compared to 2010

2010 Census U.S. Total: 61.1%
2020 Census U.S. Total: 65.3%
Difference: 4.2%

Highest Self-Response Resolution: Minnesota 73.6%
 Wisconsin: 71.4%
 Washington: 70.4%

Lowest Self-Response Resolution: Maine 56.5%
 West Virginia 55.3%
 Alaska 47.9%

State	2010 Census	2020 Census	Difference
Alabama	56.8%	61.2%	4.3%
Alaska	43.7%	47.9%	4.2%
Arizona	55.6%	62.4%	6.9%
Arkansas	58.4%	58.8%	0.5%
California	62.1%	67.4%	5.3%
Colorado	63.6%	67.9%	4.3%
Connecticut	63.5%	69.0%	5.5%
Delaware	59.1%	64.8%	5.7%
DC	61.0%	61.2%	0.2%
Florida	57.9%	62.9%	5.0%
Georgia	57.2%	61.1%	3.9%
Hawaii	56.6%	61.0%	4.3%
Idaho	60.0%	67.6%	7.6%
Illinois	66.3%	70.1%	3.8%
Indiana	65.7%	69.1%	3.4%
Iowa	69.6%	70.2%	0.6%
Kansas	65.6%	68.1%	2.4%

State	2010 Census	2020 Census	Difference
Kentucky	59.9%	66.2%	6.3%
Louisiana	56.7%	58.7%	2.0%
Maine	52.0%	56.5%	4.5%
Maryland	63.8%	69.5%	5.8%
Massachusetts	62.9%	67.3%	4.5%
Michigan	63.4%	70.0%	6.6%
Minnesota	68.1%	73.6%	5.5%
Mississippi	55.7%	58.3%	2.6%
Missouri	63.6%	64.2%	0.6%
Montana	57.1%	59.7%	2.6%
Nebraska	67.0%	70.3%	3.2%
Nevada	55.5%	65.3%	9.8%
New Hampshire	57.8%	65.9%	8.2%
New Jersey	62.9%	68.1%	5.2%
New Mexico	50.4%	57.8%	7.4%
New York	58.1%	62.4%	4.4%
North Carolina	57.1%	61.8%	4.7%

State	2010 Census	2020 Census	Difference
North Dakota	63.0%	63.2%	0.2%
Ohio	65.6%	69.4%	3.9%
Oklahoma	58.9%	59.2%	0.4%
Oregon	63.2%	67.8%	4.6%
Pennsylvania	65.4%	67.9%	2.5%
Rhode Island	61.8%	64.8%	3.0%
South Carolina	57.9%	59.6%	1.7%
South Dakota	60.6%	65.8%	5.2%
Tennessee	62.0%	64.1%	2.2%
Texas	58.9%	60.7%	1.7%
Utah	61.5%	68.9%	7.4%
Vermont	52.8%	59.6%	6.7%
Virginia	63.1%	69.4%	6.3%
Washington	62.4%	70.4%	8.1%
West Virginia	54.8%	55.3%	0.5%
Wisconsin	63.8%	71.4%	7.6%
Wyoming	56.5%	59.7%	3.2%

States with largest increase.

States with smallest increase.

The Majority of 2020 Census Self-Responses were Online *

2020 Census U.S. Total: 79.7%

Highest States: Utah 90.3%
DC 86.6%
Washington 86.2%

Lowest States: Arkansas 67.4%
West Virginia 65.6%
Mississippi 61.5%

State	2020 Census
Alabama	70.1%
Alaska	80.1%
Arizona	81.5%
Arkansas	67.4%
California	83.1%
Colorado	85.8%
Connecticut	82.2%
Delaware	81.3%
DC	86.6%
Florida	78.3%
Georgia	80.2%
Hawaii	79.4%
Idaho	82.9%
Illinois	81.7%
Indiana	76.7%
Iowa	78.5%
Kansas	78.5%

State	2020 Census
Kentucky	73.9%
Louisiana	72.1%
Maine	73.4%
Maryland	85.0%
Massachusetts	83.6%
Michigan	78.1%
Minnesota	83.7%
Mississippi	61.5%
Missouri	74.4%
Montana	75.1%
Nebraska	79.1%
Nevada	82.9%
New Hampshire	82.6%
New Jersey	84.4%
New Mexico	75.9%
New York	79.7%
North Carolina	78.1%

State	2020 Census
North Dakota	80.3%
Ohio	77.1%
Oklahoma	73.5%
Oregon	82.9%
Pennsylvania	77.9%
Rhode Island	79.2%
South Carolina	74.2%
South Dakota	77.4%
Tennessee	74.4%
Texas	81.5%
Utah	90.3%
Vermont	76.6%
Virginia	81.7%
Washington	86.2%
West Virginia	65.6%
Wisconsin	82.0%
Wyoming	76.8%

*Internet self-response is an innovation for the 2020 Census.

2020 Census Comparison to 2010 Census: Total Unresolved Housing Unit Addresses

2010 Census U.S. Total: 0.4%
2020 Census U.S. Total: 0.9%
Difference: 0.5%

Lowest States: Arizona 0.7% Iowa 0.7%
 Delaware 0.7% Minnesota 0.7%
 Indiana 0.7% Nebraska 0.7%

Highest States: Massachusetts 1.3%
 New York 1.5%
 Louisiana 1.7%

State	2010 Census	2020 Census	Difference
Alabama	0.6%	1.2%	0.5%
Alaska	0.4%	1.0%	0.6%
Arizona	0.5%	0.7%	0.2%
Arkansas	0.4%	1.0%	0.6%
California	0.2%	0.9%	0.7%
Colorado	0.6%	0.8%	0.3%
Connecticut	0.2%	1.0%	0.8%
Delaware	0.4%	0.7%	0.3%
DC	0.9%	1.1%	0.2%
Florida	0.5%	0.9%	0.3%
Georgia	0.8%	1.0%	0.2%
Hawaii	0.3%	1.2%	0.9%
Idaho	0.5%	0.8%	0.3%
Illinois	0.3%	0.9%	0.6%
Indiana	0.1%	0.7%	0.6%
Iowa	0.1%	0.7%	0.5%
Kansas	0.1%	0.8%	0.7%

State	2010 Census	2020 Census	Difference
Kentucky	0.3%	1.0%	0.6%
Louisiana	0.7%	1.7%	1.0%
Maine	0.2%	1.0%	0.8%
Maryland	0.4%	0.8%	0.4%
Massachusetts	0.2%	1.3%	1.1%
Michigan	0.3%	0.9%	0.6%
Minnesota	0.2%	0.7%	0.5%
Mississippi	0.7%	1.1%	0.5%
Missouri	0.3%	0.9%	0.6%
Montana	0.4%	0.9%	0.5%
Nebraska	0.2%	0.7%	0.6%
Nevada	0.6%	0.9%	0.2%
New Hampshire	0.2%	0.8%	0.7%
New Jersey	0.4%	1.0%	0.5%
New Mexico	0.9%	1.0%	0.1%
New York	0.5%	1.5%	1.0%
North Carolina	0.6%	1.0%	0.3%

State	2010 Census	2020 Census	Difference
North Dakota	0.2%	0.9%	0.7%
Ohio	0.2%	0.8%	0.6%
Oklahoma	0.2%	0.8%	0.6%
Oregon	0.4%	0.8%	0.4%
Pennsylvania	0.3%	0.9%	0.7%
Rhode Island	0.2%	1.2%	1.0%
South Carolina	0.6%	1.0%	0.4%
South Dakota	0.5%	0.8%	0.3%
Tennessee	0.5%	0.9%	0.4%
Texas	0.5%	0.9%	0.4%
Utah	0.2%	1.0%	0.8%
Vermont	0.2%	1.0%	0.9%
Virginia	0.3%	0.8%	0.5%
Washington	0.3%	1.0%	0.6%
West Virginia	0.3%	1.1%	0.8%
Wisconsin	0.2%	0.8%	0.6%
Wyoming	0.5%	0.9%	0.4%

States with smallest increase.

States with largest increase.

Quality metrics release 2 (May 2021)

Summary of Metrics Available in Release 2

- Average occupied household size by data collection operation
 - Self-response, Nonresponse Followup (NRFU), Other operations, or Unresolved (went to count imputation)
- Percent one-person and two-person households by data collection operation
 - Self-response, Nonresponse Followup (NRFU), Other operations, or Unresolved (went to count imputation)
- Housing unit status by data collection operation
 - Distribution of how occupied housing units were enumerated
 - Distribution of how vacant housing units were enumerated

Highlights from Release 2

- The average household size was 2.4 people for both households that self-responded and households enumerated in NRFU.
- Among households that self-responded, 26% of occupied households had one person and 35% had two people living there.
- Among households enumerated in NRFU, 33% of occupied households had one person and 27% had two people living there.
- 8% of all housing units (occupied or vacant) were counted by self-response without a Census ID (“non-ID”).
- 77% of occupied housing units were enumerated by self-response.

Quality metrics release 3 (August 2021)

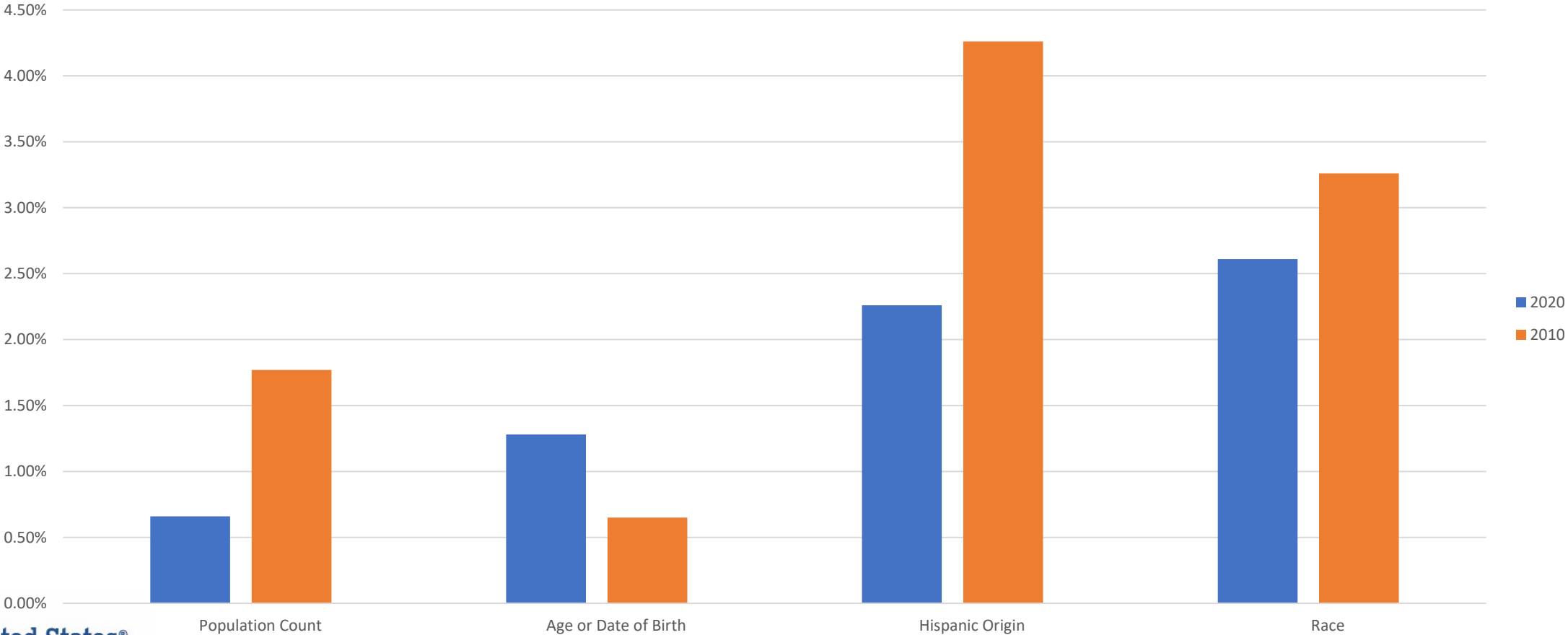
Summary of Item Nonresponse Metrics Available in Release 3

- Item nonresponse rates for redistricting data items (population count, age or date of birth, Hispanic origin, race)
- All occupied housing units
- Self-response occupied housing units
 - All self-response
 - By self-response mode (internet, paper, telephone)
- NRFU occupied housing units
 - All NRFU
 - By respondent type (household member, proxy, administrative records)
- Other operations
- Group quarters
- Population count only (by operation)

Highlights from Release 3, item nonresponse rates

- Overall, item nonresponse rates for most questions were higher in the 2020 Census compared to 2010. Among all occupied households, this ranged from 0.52% for population count to 5.95% for age or date of birth.
- Item nonresponse rates for most questions were lowest for households that self-responded, especially for internet and phone respondents. Among internet respondents, this ranged from 1.37% for age or date of birth to 2.19% for race.
- Among households enumerated in NRFU, item nonresponse rates were highest when a proxy respondent provided the data. For example, among NRFU household member interviews 8.71% were missing race compared to 41.22% for proxy respondents.
- Group quarters tended to have relatively high item nonresponse rates across question items. For instance, 17.81% of people in GQs were missing age or date of birth.

2020 Census Comparison to 2010 Census: Item Nonresponse Rates for Self-Responding Households



2020 Census Comparison to 2010 Census: Item Nonresponse Rates for Race, Self-Responding Households

2010 Census U.S. Total: 3.3%
2020 Census U.S. Total: 2.6%
Difference: -0.7%

Lowest States: North Dakota 1.3%
 Minnesota 1.4%
 Wisconsin 1.4%

Highest States: Texas 4.0%
 California 4.8%
 New Mexico 4.8%

State	2010 Census	2020 Census	Difference
Alabama	1.4%	1.6%	0.2%
Alaska	1.9%	1.9%	0.0%
Arizona	6.3%	3.8%	-2.5%
Arkansas	2.0%	1.9%	-0.1%
California	7.6%	4.8%	-2.8%
Colorado	4.0%	2.8%	-1.2%
Connecticut	3.4%	2.6%	-0.8%
Delaware	1.9%	2.0%	0.1%
DC	1.9%	1.9%	0.0%
Florida	2.4%	2.6%	0.2%
Georgia	2.3%	2.1%	-0.2%
Hawaii	1.0%	2.3%	1.3%
Idaho	3.0%	2.2%	-0.8%
Illinois	3.5%	2.4%	-1.1%
Indiana	1.7%	1.8%	0.1%
Iowa	1.6%	1.6%	0.0%
Kansas	2.3%	2.0%	-0.3%

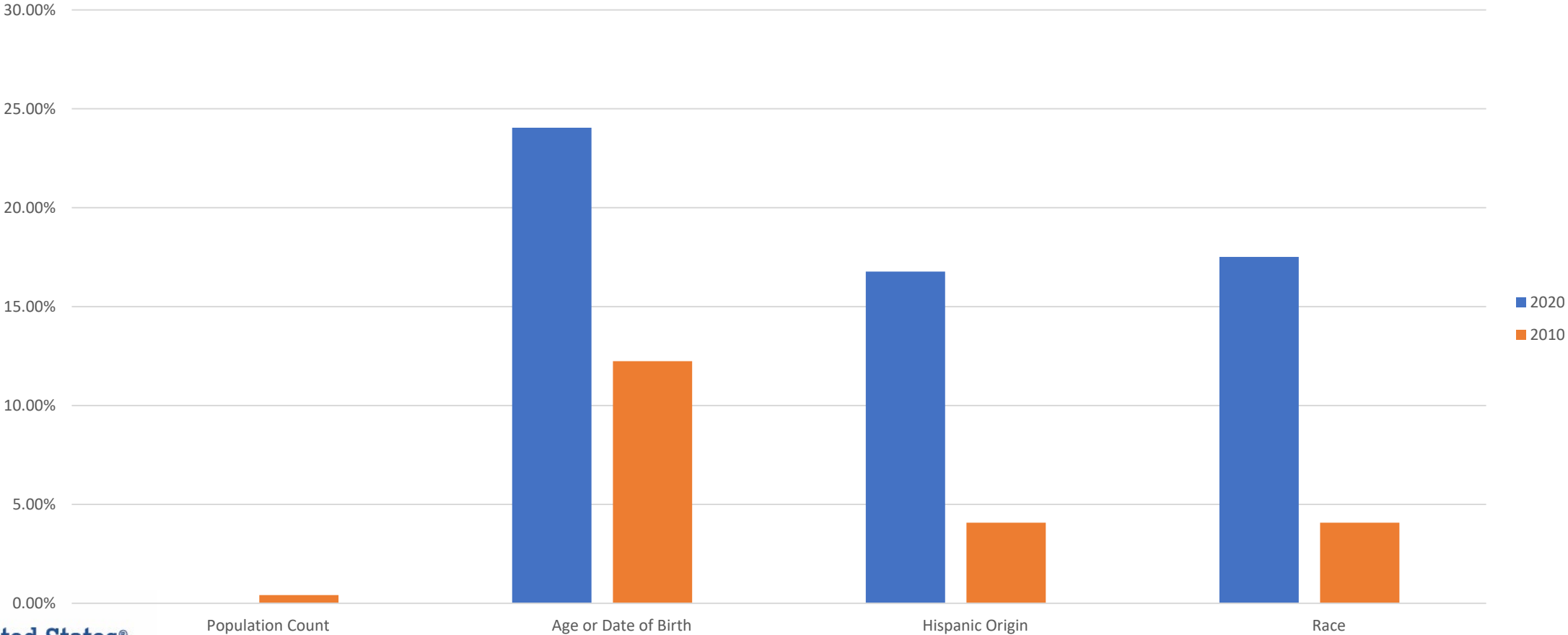
State	2010 Census	2020 Census	Difference
Kentucky	1.1%	1.5%	0.4%
Louisiana	1.3%	1.7%	0.4%
Maine	1.0%	1.6%	0.6%
Maryland	1.7%	1.9%	0.2%
Massachusetts	2.7%	2.2%	-0.5%
Michigan	1.5%	1.6%	0.1%
Minnesota	1.4%	1.4%	0.0%
Mississippi	1.1%	1.6%	0.5%
Missouri	1.3%	1.6%	0.3%
Montana	1.4%	1.6%	0.2%
Nebraska	2.2%	1.8%	-0.4%
Nevada	5.9%	3.5%	-2.4%
New Hampshire	1.4%	1.7%	0.3%
New Jersey	3.4%	2.6%	-0.8%
New Mexico	8.2%	4.8%	-3.4%
New York	4.0%	3.1%	-0.9%
North Carolina	2.0%	1.9%	-0.1%

State	2010 Census	2020 Census	Difference
North Dakota	0.9%	1.3%	0.4%
Ohio	1.2%	1.5%	0.3%
Oklahoma	2.5%	2.1%	-0.4%
Oregon	3.1%	2.3%	-0.8%
Pennsylvania	1.9%	1.8%	-0.1%
Rhode Island	3.1%	2.4%	-0.7%
South Carolina	1.5%	1.7%	0.2%
South Dakota	1.1%	1.5%	0.4%
Tennessee	1.5%	1.7%	0.2%
Texas	5.6%	4.0%	-1.6%
Utah	3.0%	2.4%	-0.6%
Vermont	0.9%	1.5%	0.6%
Virginia	1.7%	1.8%	0.1%
Washington	2.9%	2.2%	-0.7%
West Virginia	0.9%	1.6%	0.7%
Wisconsin	1.7%	1.4%	-0.3%
Wyoming	2.3%	2.0%	-0.3%

States with largest decrease.

States with largest increase.

2020 Census Comparison to 2010 Census: Item Nonresponse Rates for Nonresponse Followup Households



2020 Census Comparison to 2010 Census: Item Nonresponse Rates for Race, Nonresponse Followup Households

2010 Census U.S. Total: 4.1%
2020 Census U.S. Total: 17.5%
Difference: 13.4%

Lowest States: West Virginia 8.4%
 Maine 9.6%
 Arkansas 9.9% Vermont 9.9%

Highest States: DC 22.6%
 New Mexico 22.9%
 Hawaii 23.2%

State	2010 Census	2020 Census	Difference
Alabama	2.5%	15.5%	13.0%
Alaska	5.2%	14.8%	9.6%
Arizona	6.4%	22.4%	16.0%
Arkansas	3.2%	9.9%	6.7%
California	4.6%	19.9%	15.3%
Colorado	6.9%	22.1%	15.2%
Connecticut	3.9%	16.2%	12.3%
Delaware	4.3%	15.8%	11.5%
DC	4.8%	22.6%	17.8%
Florida	4.1%	17.8%	13.7%
Georgia	3.5%	17.6%	14.1%
Hawaii	5.5%	23.2%	17.7%
Idaho	5.1%	16.2%	11.1%
Illinois	3.6%	17.2%	13.6%
Indiana	3.7%	13.6%	9.9%
Iowa	3.0%	15.4%	12.4%
Kansas	2.9%	15.8%	12.9%

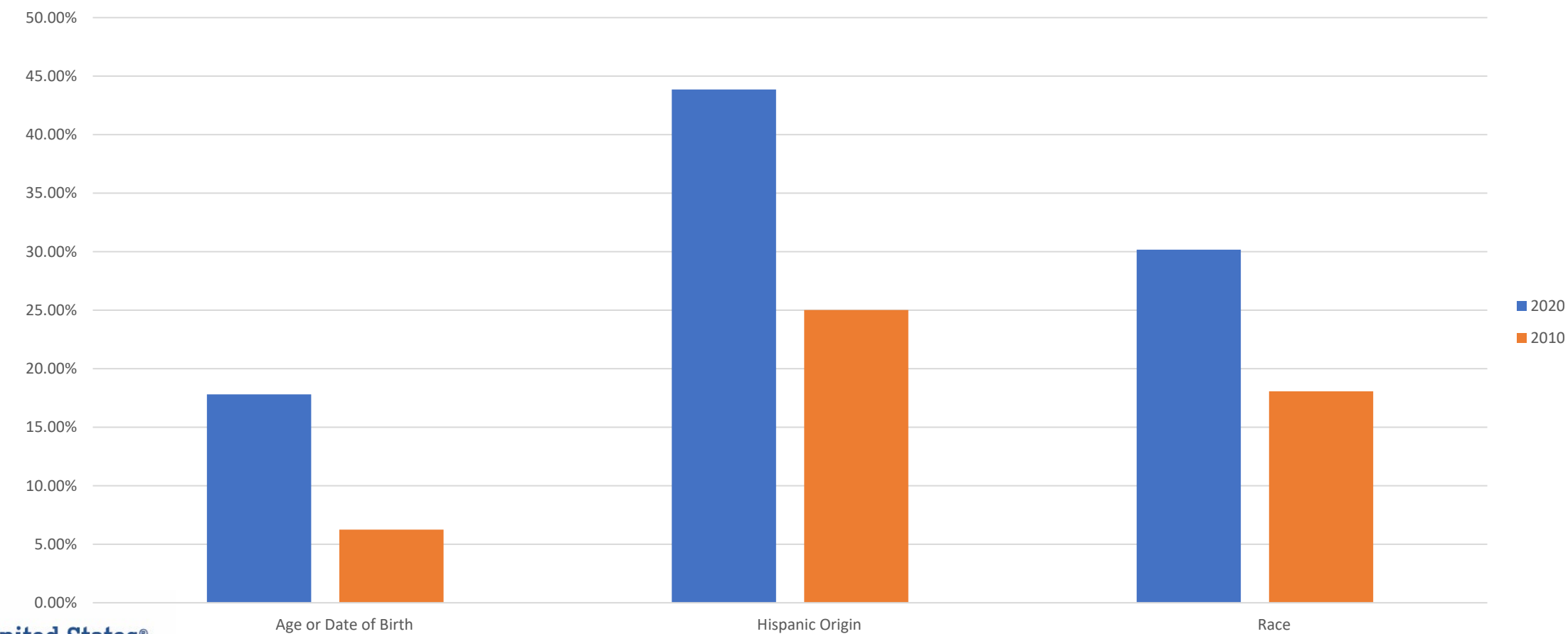
State	2010 Census	2020 Census	Difference
Kentucky	2.6%	11.5%	8.9%
Louisiana	2.6%	13.5%	10.9%
Maine	3.3%	9.6%	6.3%
Maryland	4.1%	17.2%	13.1%
Massachusetts	4.6%	18.0%	13.4%
Michigan	3.9%	16.7%	12.8%
Minnesota	4.1%	15.6%	11.5%
Mississippi	1.9%	12.1%	10.2%
Missouri	3.4%	12.6%	9.2%
Montana	5.6%	13.8%	8.2%
Nebraska	3.7%	16.3%	12.6%
Nevada	6.7%	22.1%	15.4%
New Hampshire	3.6%	14.1%	10.5%
New Jersey	4.0%	18.5%	14.5%
New Mexico	6.1%	22.9%	16.8%
New York	4.7%	17.3%	12.6%
North Carolina	3.8%	16.1%	12.3%

State	2010 Census	2020 Census	Difference
North Dakota	5.4%	17.5%	12.1%
Ohio	3.0%	14.5%	11.5%
Oklahoma	3.3%	15.1%	11.8%
Oregon	4.8%	18.4%	13.6%
Pennsylvania	3.5%	16.7%	13.2%
Rhode Island	4.3%	19.2%	14.9%
South Carolina	3.0%	15.8%	12.8%
South Dakota	3.6%	11.1%	7.5%
Tennessee	3.1%	12.6%	9.5%
Texas	4.7%	21.3%	16.6%
Utah	4.1%	17.4%	13.3%
Vermont	2.0%	9.9%	7.9%
Virginia	3.7%	16.9%	13.2%
Washington	4.6%	17.3%	12.7%
West Virginia	2.1%	8.4%	6.3%
Wisconsin	3.7%	15.0%	11.3%
Wyoming	4.9%	14.8%	9.9%

States with smallest increase.

States with largest increase.

2020 Census Comparison to 2010 Census: Item Nonresponse Rates for Group Quarters



2020 Census Comparison to 2010 Census: Item Nonresponse Rates for Race, Group Quarters

2010 Census U.S. Total: 18.1%
2020 Census U.S. Total: 30.2%
Difference: 12.1%

Lowest States: Idaho 10.6%
Mississippi 12.7%
Montana 12.8%

Highest States: Alaska 54.8%
DC 56.4%
Hawaii 58.2%

State	2010 Census	2020 Census	Difference
Alabama	12.6%	20.6%	8.0%
Alaska	19.2%	54.8%	35.6%
Arizona	32.6%	32.9%	0.3%
Arkansas	21.3%	13.9%	-7.4%
California	25.9%	43.5%	17.6%
Colorado	20.7%	32.5%	11.8%
Connecticut	14.6%	34.4%	19.8%
Delaware	12.7%	42.0%	29.3%
DC	32.9%	56.4%	23.5%
Florida	16.2%	19.1%	2.9%
Georgia	15.7%	26.8%	11.1%
Hawaii	27.9%	58.2%	30.3%
Idaho	41.0%	10.6%	-30.4%
Illinois	16.2%	22.9%	6.7%
Indiana	15.3%	21.2%	5.9%
Iowa	10.5%	30.2%	19.7%
Kansas	11.1%	17.8%	6.7%

State	2010 Census	2020 Census	Difference
Kentucky	13.0%	16.0%	3.0%
Louisiana	10.9%	33.8%	22.9%
Maine	37.1%	38.3%	1.2%
Maryland	9.6%	34.8%	25.2%
Massachusetts	26.3%	40.4%	14.1%
Michigan	11.0%	32.5%	21.5%
Minnesota	12.0%	32.0%	20.0%
Mississippi	11.7%	12.7%	1.0%
Missouri	9.1%	35.7%	26.6%
Montana	11.8%	12.8%	1.0%
Nebraska	14.1%	23.0%	8.9%
Nevada	18.4%	18.1%	-0.3%
New Hampshire	18.5%	48.6%	30.1%
New Jersey	27.9%	35.8%	7.9%
New Mexico	24.8%	25.1%	0.3%
New York	18.8%	32.4%	13.6%
North Carolina	19.2%	23.5%	4.3%

State	2010 Census	2020 Census	Difference
North Dakota	15.4%	34.6%	19.2%
Ohio	11.5%	28.7%	17.2%
Oklahoma	23.1%	27.5%	4.4%
Oregon	11.9%	35.6%	23.7%
Pennsylvania	15.0%	30.8%	15.8%
Rhode Island	15.4%	43.0%	27.6%
South Carolina	14.4%	16.7%	2.3%
South Dakota	20.6%	21.4%	0.8%
Tennessee	14.2%	24.1%	9.9%
Texas	23.1%	22.7%	-0.4%
Utah	17.9%	35.6%	17.7%
Vermont	15.1%	51.7%	36.6%
Virginia	17.1%	34.6%	17.5%
Washington	15.0%	37.1%	22.1%
West Virginia	21.9%	15.8%	-6.1%
Wisconsin	9.3%	26.7%	17.4%
Wyoming	8.5%	25.6%	17.1%

States with largest decrease.

States with largest increase.

Summary and next steps

Measuring Quality in the 2020 Census

- [Comparing census results](#) to 2020 Demographic Analysis estimates and other population benchmarks
- Releasing information on the [improvements to how we measure race and ethnicity](#).
- Conducting a [Post-Enumeration Survey](#) to measure the proportion of people and housing units potentially missed or counted erroneously in the census.
- Working with respected members of the [scientific and statistical community](#) to provide independent, external assessments of the census.
- Conducting a series of planned [assessments and evaluations](#) of the 2020 Census operations.
- Releasing the [operational quality metrics](#).

Item Nonresponse Rate Results Planned for Assessment Report

- Results for all data items
 - population count, undercount, tenure, sex, age or date of birth, Hispanic origin, race, overcount, relationship
- For self-responses
 - by mode, TEA, ID and Non-ID, English and Spanish
- For enumerator returns
 - NRFU, UE, CI, RA, ETL
- For group quarters
 - correctional facilities for adults, juvenile facilities, nursing facilities, other institutional facilities, college/university housing, military quarters, other noninstitutional facilities
- And more...
 - Person-level data completeness, imputation rates, substitution rates

What Did We Learn from the Operational Quality Metrics?

- Overall, the metrics suggest that the quality of the 2020 Census is on par with the 2010 Census
 - High self-response
 - Low rate of unresolved addresses after data collection ended
 - Item nonresponse rates higher from some operations (NRFU, GQ) but lower or similar for others (self-response)
 - Other metrics similar from 2010 to 2020
- Variation from one place to another
- Build quality metrics into planning and design for the 2030 Census

Questions for NAC

- Which operational quality metrics do you find most helpful?
- Do you have suggestions on other ways to measure the quality of the 2020 Census?